DEPARTMENT OF NATIONAL DEFENCE
CANADA

OPERATIONAL RESEARCH DIVISION

PERSONNEL OPERATIONAL RESEARCH TEAM

RESEARCH NOTE 9707

AN ASSESSMENT OF THE UNIVERSITY DEGREE POLICY FOR CANADIAN FORCES OFFICERS

BY

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and
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ABSTRACT

The "Report to the Prime Minister on the Leadership and Management of the Canadian Forces" tabled by the Minister of National Defence 25 March 1997 contained many planned changes to personnel policies. One of these was making a university degree a prerequisite to commissioning as an officer (with the only exceptions to be made for those commissioned from the ranks). This research note analyses the current military officer database to determine what percentage of officers have university degrees in each military occupation (MOC). Other factors such as rank, age, and entry plan are included in the analysis in order to examine some of the implications of having a "universal" requirement for an undergraduate degree. Since a significant proportion of serving officers in certain MOCs do not now have university degrees, it is shown here that these MOCs are not in a position to easily adapt to such a requirement. Furthermore, in most cases, the age profiles of officers without degrees will prevent the quick attainment of an "all university degree" officer corps.

RÉSUMÉ

Le «Rapport sur le leadership et la gestion au sein des Forces canadiennes déposé devant le Premier ministre» par le Ministre de la Défense nationale le 25 mars 1997 énonce que plusieurs changements aux politiques du personnel sont prévus. Un de ces changements est d'exiger un grade universitaire comme préalable à l'intégration en tant qu'officier (une exception étant accordée aux officiers sortis du rang). La présente recherche vise à faire une analyse de la banque de données sur les officiers militaires, afin de déterminer quel est le pourcentage d'officiers détenant un diplôme universitaire dans chaque groupe professionnel militaire (GPM). D'autres facteurs, tels que le grade, l'âge, le programme d'intégration, seront étudiés au cours de l'analyse pour mesurer certaines des conséquences que pourrait avoir l'établissement «universel» d'un préalable comme le diplôme de premier cycle. Étant donné que dans certains GPM une proportion importante d'officiers actifs ne détiennent pas

actuellement de diplômes universitaires, il est démontré ici que ces GPM ne sont pas en mesure de s'adapter facilement à une telle exigence. De plus, dans la plupart des cas, la moyenne d'âge des officiers ne détenant pas de diplômes universitaires est telle, que l'obtention rapide d'un corps d'officiers entièrement formé de diplômés universitaires devient un objectif impossible à atteindre.

EXECUTIVE SUMMARY

1. This paper provides an analysis of the current Canadian Forces (CF) officer database, reporting the numbers of personnel in each Military Occupation (MOC) who hold university degrees. This information is correlated with other factors such as rank, age, engagement type, and entry plan to provide some insights into the implications of the policy that all CF officers have a university degree.[1]

2. The analysis of current officer demographics reveals a wide spectrum of MOC-specific situations with respect to the university degree policy. At one end of this spectrum are the professional/technical MOCs, where a university degree is the standard expected for all officers who have completed their training (e.g. medical, dental, and legal officers). In the case of the engineering MOCs, a very high proportion of current CF officers have university degrees, with many of the remainder being commissioned from the ranks (CFR), and thus exempt from the policy. Also, some of the smaller, non-operational MOCs should have no problem implementing the university degree policy (e.g. personnel selection, social work, chaplains). In certain other MOCs (such as logistics), the high numbers of officers with university degrees may allow a relatively smooth transition to an "all university degree" officer corps. However, as the proportion of officers with university degrees goes down (below 50% in some cases), significant transitional problems can be anticipated. These problems are most apparent in operational MOCs.

3. Table ES-I presents the list of officer MOCs which have been identified in this paper as potentially having problems in a transition to a university degree policy for all officers. The list is sorted by the percentage of officers (currently within the MOC) holding a university degree. To represent a "ten year" look forward, the third column shows the percentage of officers under the age of 45 who hold a university degree. The fourth column gives the percentage of CFR officers in the MOC who would be exempt from the university degree requirement. (No MOCs with populations below 100 are listed.)

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[1] This policy is contained in the "Report to the Prime Minister on the Leadership and Management of the Canadian Forces" tabled by the Minister of National Defence 25 March 1997. (Reference 1)

TABLE ES-I
MOCs WHICH MAY FACE PROBLEMS WITH
THE OFFICER/DEGREE UNIVERSALITY POLICY
(Population > 100 Officers)

MOC	% of all Officers with a Degree	% of all Officers with a Degree (age < 45)	% CFR
39 - AEC	38	36	5
32 - PILOT	44	42	0
57 - NUR	45	41	0
23 - INFANTRY	50	51	2
71 - MARS	53	50	2
22 - ARTILLERY	55	55	1
21 - ARMOUR	56	51	2
31 - ANAV	57	56	0
82 - INT	69	75	4

4. There are many unanswered questions which remain to be addressed in order to implement such a policy - particularly in "problem" MOCs. Will the university degree policy be applied immediately? If not, what would be an appropriate transition period? What is the "cost" of a university degree policy - with respect to operational effectiveness, attrition, recruitment, training, gender/minority integration, etc? Should "young" officers delay physically demanding, MOC-specific training for academic qualifications and would this not lower effectiveness in "sharp end" units? What are the implications on these MOCs for future promotions, postings, experience levels, etc.? Should the policy be applied equally to all rank levels? These issues (and likely many others) deserve further investigation and analysis. Transitional problems can be anticipated for those MOCs in which significant numbers of "young" serving officers do not have university degrees - particularly where high proportions of these officers have lengthy periods remaining in their contract engagements.

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I. INTRODUCTION

1. The "Report to the Prime Minister on the Leadership and Management of the Canadian Forces" tabled by the Minister of National Defence 25 March 1997 contained many planned changes to personnel policies. (Reference 1) One of these was making a university degree a prerequisite to commissioning as an officer (with the only exceptions to be made for those commissioned from the ranks). The reason given for such a policy was:

> ".. to improve officer development and to inculcate an ethos appropriate to Canadian Forces..".

Reference 2 echoes this sentiment:

> "When one Canadian in five completes such a (university) degree or its equivalent, this is no longer an elitist pre-requisite for a commission in Canada's armed forces."

2. A number of aspects of such a personnel policy remain unclear/undefined at this time. Will all military occupations (MOCs) be equally affected? (The policy statement appears to say that this indeed will be universally applied.) Is there a timeframe for transition to an "all university degree" officer corps? What provision will be made to assist current officers in obtaining a university degree? (Reference 1 makes no mention of any time constraints on implementation.) Will there be any promotions available for officers without degrees? Will officers be unable to obtain "indefinite period of service" (IPS) offers in the future if they do not have a university degree? (Again, there are no policy details on this subject contained in Reference 1.)

3. Clearly, not all MOCs can be treated equally. In some fields (e.g. legal, medical/dental), there are professional qualifications required in order to carry out the normal duties associated with that MOC. This may imply that the degree policy has no effect on certain MOCs. In other MOCs, particularly in operational environments, there may be good reasons for not delaying "sharp end" military training for academic training, especially during the most physically demanding portion of a military officer career, i.e. at the junior officer ranks.

Aim

4. The aim of this research note is to provide an overview of the current officer database with respect to the numbers of personnel in each MOC who hold university degrees. This information is correlated with other factors such as rank, age, and entry plan to provide some insights into the implications of the policy that all Canadian Forces (CF) officers have a university degree.

Scope

5. The only officer entry plan which appears to be exempt from the university degree policy is commissioning from the ranks (CFR). As the CFR exemption may affect certain MOCs more than others, a tally is kept of officers who have this as their entry plan.

6. This research note makes use of the April 1997 CF officer database for "trained effective strength", obtained from the Directorate of Personnel Information Systems (DPIS). Thus, no data are reported on personnel in the "training pipeline". Although training is a central issue in personnel policies such as the one investigated here, no costs for recruitment, training, and development are taken into account. This database is assumed to be representative of military officer "personnel characteristics" as of September 1997.

7. This paper is preliminary in nature. That is, not all factors relating to the university degree policy are examined. No "modelling" of MOCs was done to "predict" personnel or preferred manning level (PML) shortfalls - although this could be done in subsequent studies.[1] This paper does include a number of suggestions for possible future analyses in this area, should that be required.

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[1] Such modelling, if required, is available from the Personnel Operational Research Team, provided that it receives a sufficiently high priority from project sponsors.

II. THE CANADIAN FORCES OFFICER DATABASE

8. This research note makes use of data obtained from DPIS related to the CF officer "trained effective strength" as of April 1997. This information was requested to support a number of sponsored personnel projects which make use of the Generic Officer Model, developed using the "GeM" modelling environment. (Reference 3) As the data arrived in text format, a Microsoft Access database was created to facilitate analysis of this information. A significant amount of time was spent "cleaning up" the data, calculating several dependent variables (such as age), checking for errors/incongruities, etc. Although no database of this size can be completely free of errors, any remaining faults are "in the noise" with respect to the overall statistics quoted here. A series of specific Microsoft Access "queries" were employed to obtain the results reported here.

9. The "trained effective strength" officer database contained records for 10870 CF officers. The primary analysis variables for this paper are MOC, rank, age, entry plan, and whether or not an officer has a university degree. The database contains other information which is referred to in this paper on an ad-hoc basis (e.g. - engagement type), but which do not form an integral part of the analysis.

10. The "trained effective strength" officer database was separated into categories, first by MOC and then by rank. Percentages of officers with and without university degrees were determined by using Microsoft Access "cross-tabulations". This was done for all officers in the database. Subsequently, the percentages were re-done in "age bins" in order to examine circumstances in the "near future" for all officers under age 50, under age 45, and under age 40. Also, the percentage of CFR officers was determined for each MOC.[2]

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[2] Not all "formerly non-commissioned" officers are CFRs. However, those officers whose entry plan is UTPM - University Training Plan (Men) - usually obtain a university degree.

III. ANALYSIS OF OFFICER/DEGREE UNIVERSALITY BY MOC

MOC 11 and 12 - General Officers

11. The database had 75 general officers as of April 1997. The percentage of all general officers who have a university degree is 81%. Five of seven lieutenant-generals, 17 of 21 major-generals, and 39 of 47 brigadier-generals have university degrees. None of the general officers in the database have been commissioned from the ranks. It is anticipated that the percentage of general officers with university degrees will increase in the course of time as more of the "younger" general officers have university degrees. That is, 26 of 28 general officers under the age of 50 have university degrees and both general officers under the age of 45 have university degrees. There are no general officers under the age of 40.

MOC 21 - Armour (ARMD)

12. The database had 394 ARMD officers as of April 1997. The percentage of all ARMD officers who have a university degree is 56%. The percentage is highest at the colonel rank (11 of 12 officers) and lowest at the captain rank (41% of 197 officers). There are relatively few ARMD officers in the database who have been commissioned from the ranks (2 majors and 5 captains). It is not anticipated that the percentage of armour officers with university degrees will increase "naturally" as many of the "younger" armour officers do not have university degrees, see Table I below.

TABLE I

OFFICER/DEGREE UNIVERSALITY BY AGE - MOC 21 (ARMD)

Age Interval	Population Size	Percentage with a University Degree
All	394	56%
Under 50	354	54%
Under 45	316	51%
Under 40	265	48%

13. There is only one ARMD colonel under 45 years of age and he does not have a university degree. Of the 12 lieutenant-colonels without a university degree, seven are under age 45, two of whom are under age 40. Also, 19 of 38 ARMD majors (all ages) without a university degree have IPS contracts while 8 of 116 ARMD captains (all ages) without a university degree have an IPS contract. These results indicate that this MOC may have difficulties if the university degree policy is implemented quickly.

MOC 22 - Artillery (ARTY)

14. The database had 439 ARTY officers as of April 1997. The percentage of all ARTY officers who have a university degree is 55%. The percentage is highest at the lieutenant rank (20 of 23 officers) and lowest at the captain rank (50% of 243 officers). Approximately 1% of the officers in this MOC have been commissioned from the ranks (2 majors and 2 captains). As for ARMD, it is not anticipated that the percentage of ARTY officers with university degrees will increase "naturally" as many of the "younger" ARTY officers do not have university degrees, see Table II below.

TABLE II

OFFICER/DEGREE UNIVERSALITY BY AGE - MOC 22 (ARTY)

Age Interval	Population Size	Percentage with a University Degree
All	439	55%
Under 50	419	55%
Under 45	367	55%
Under 40	294	56%

15. There are two ARTY colonels without a university degree under 50 years of age, one of whom is under 45 years of age. There are 10 ARTY lieutenant-colonels without a university degree under the age of 50, five of whom are under the age of 45 (one of whom is under age 40). Also, 24 of 53 ARTY majors (all

ages) without a university degree have IPS contracts while 9 of 121 ARTY captains (all ages) without a university degree have an IPS contract. These results indicate that this MOC may have difficulties if the university degree policy is implemented quickly.

MOC 23 - Infantry (INF)

16. The database had 855 INF officers as of April 1997. The percentage of all INF officers who have a university degree is 50%. The percentage is highest at the colonel rank (21 of 30 officers) and lowest at the captain rank (44% of 441 officers). Approximately 2% of the officers in this MOC have been commissioned from the ranks (5 majors and 13 captains). It is not anticipated that the percentage of INF officers with university degrees will increase "naturally" as many of the "younger" INF officers do not have university degrees, see Table III below.

TABLE III
OFFICER/DEGREE UNIVERSALITY BY AGE - MOC 23 (INF)

Age Interval	Population Size	Percentage with a University Degree
All	855	50%
Under 50	774	52%
Under 45	673	51%
Under 40	539	52%

17. There are four INF colonels without a university degree under 50 years of age, three of whom are under 45 years of age. There are 24 INF lieutenant-colonels without a university degree under the age of 50, 13 of whom are under the age of 45 (two of whom are under age 40). Also, 60 of 111 INF majors (all ages) without a university degree have IPS contracts while 38 of 248 INF captains (all ages) without a university degree have an IPS contract. This MOC may also have difficulties if the university degree policy is implemented quickly.

MOC 24 - Engineer (ENGR)

18. The database had 284 ENGR officers as of April 1997. The percentage of all ENGR officers who have a university degree is 86%. The percentage is highest at the colonel rank (11 of 11 officers) and lowest at the lieutenant rank (9 of 12 officers). Approximately 4% of the officers in this MOC have been commissioned from the ranks (1 lieutenant-colonel, 3 majors, and 6 captains), and are thus exempt from the universal degee policy. The percentage of ENGR officers with university degrees is relatively constant as a function of age, see Table IV below. This MOC is unlikely to have significant difficulties with the university degree policy for officers.

TABLE IV
OFFICER/DEGREE UNIVERSALITY BY AGE - MOC 24 (ENGR)

Age Interval	Population Size	Percentage with a University Degree
All	284	86%
Under 50	265	88%
Under 45	239	88%
Under 40	185	89%

MOC 31 - Air Navigator (ANAV)

19. The database had 677 ANAV officers as of April 1997. The percentage of all ANAV officers who have a university degree is 57%. The percentage is highest at the colonel rank (15 of 17 officers) and lowest at the captain rank (50% of 436 officers). No ANAV officers in the database were commissioned from the ranks. It is not anticipated that the percentage of ANAV officers with university degrees will increase "naturally" as many of the "younger" ANAV officers do not have university degrees, see Table V below.

TABLE V
OFFICER/DEGREE UNIVERSALITY BY AGE - MOC 31 (ANAV)

Age Interval	Population Size	Percentage with a University Degree
All	677	57%
Under 50	628	58%
Under 45	585	56%
Under 40	486	53%

20. There is one ANAV colonel without a university degree under 50 years of age. There are 4 ANAV lieutenant-colonels without a university degree under the age of 50, 3 of whom are under the age of 45. Also, 19 of 62 ANAV majors (all ages) without a university degree have IPS contracts while 17 of 219 ANAV captains (all ages) without a university degree have an IPS contract. These results indicate that this MOC may have difficulties if the university degree policy is implemented quickly.

MOC 32 - Pilot (PLT)

21. The database had 1485 PLT officers as of April 1997. The percentage of all PLT officers who have a university degree is 44%. The percentage is highest at the colonel rank (23 of 30 officers) and lowest at the captain rank (40% of 924 officers). One captain was commissioned from the ranks. As the percentage of PLT officers with a university degree goes down slightly for the lower "age bins", it is not anticipated that the percentage of all PLT officers with university degrees will increase "naturally", see Table VI below.

22. There are two PLT colonels without a university degree under 50 years of age, one of whom is under age 45. There are 13 PLT lieutenant-colonels without a university degree under the age of 50, 8 of whom are under the age of 45 (4 of whom are under the age of 40). Also, 74 of 182 PLT majors (all ages) without a university degree have IPS contracts while 43 of 559 PLT captains (all

ages) without a university degree have an IPS contract. These results indicate that this MOC will have difficulties implementing the university degree policy for its officers.

TABLE VI
OFFICER/DEGREE UNIVERSALITY BY AGE - MOC 32 (PLT)

Age Interval	Population Size	Percentage with a University Degree
All	1485	44%
Under 50	1373	45%
Under 45	1254	42%
Under 40	1002	41%

MOC 39 - Aerospace Control (AEC)

23. The database had 440 AEC officers as of April 1997. The percentage of all AEC officers who have a university degree is 38%. The percentage is highest at the colonel rank (5 of 5 officers) and lowest at the captain and major levels (34% of 318 and 90 officers, respectively). Approximately 5% of the officers in this MOC have been commissioned from the ranks (6 majors and 17 captains). It is not anticipated that the percentage of AEC officers with university degrees will increase "naturally" as many of the "younger" AEC officers do not have university degrees, see Table VII below.

24. There are no AEC colonels without a university degree. There are 5 AEC lieutenant-colonels without a university degree under the age of 50, none of whom are below the age of 45. Also, 31 of 59 AEC majors (all ages) without a university degree have IPS contracts while 21 of 209 AEC captains (all ages) without a university degree have an IPS contract. These results indicate that this MOC will have difficulties implementing the university degree policy for its officers.

TABLE VII
OFFICER/DEGREE UNIVERSALITY BY AGE - MOC 39 (AEC)

Age Interval	Population Size	Percentage with a University Degree
All	440	38%
Under 50	426	37%
Under 45	373	36%
Under 40	315	35%

MOC 41 - Aerospace Engineer (AERE)

25. The database had 597 AERE officers as of April 1997. The percentage of all AERE officers who have a university degree is 86%. The percentage is highest at the colonel rank (12 of 12 officers) and lowest at the lieutenant rank (26 of 33 officers). Approximately 10% of the officers in this MOC have been commissioned from the ranks (1 lieutenant-colonel, 9 majors, 47 captains, and 3 lieutenants). The percentage of AERE officers with university degrees goes up for the lower "age bins", see Table VIII below. This MOC is unlikely to have significant difficulties with the university degree policy for officers.

TABLE VIII
OFFICER/DEGREE UNIVERSALITY BY AGE - MOC 41 (AERE)

Age Interval	Population Size	Percentage with a University Degree
All	597	86%
Under 50	575	87%
Under 45	513	90%
Under 40	405	94%

MOC 42 - Communications and Electronics Engineer (CELE)

26. The database had 834 CELE officers as of April 1997. The percentage of all CELE officers who have a university degree is 80%. The percentage is highest at the colonel rank (15 of 15 officers) and lowest at the captain rank (75% of 405 officers). Approximately 8% of the officers in this MOC have been commissioned from the ranks (1 lieutenant-colonel, 17 majors, and 50 captains). The percentage of CELE officers with university degrees goes up for the "younger" officers, see Table IX below. This MOC is unlikely to have significant difficulties with the university degree policy for officers.

TABLE IX
OFFICER/DEGREE UNIVERSALITY BY AGE - MOC 42 (CELE)

Age Interval	Population Size	Percentage with a University Degree
All	834	80%
Under 50	777	82%
Under 45	667	85%
Under 40	567	86%

MOC 43 - Electrical and Mechanical Engineer (EME)

27. The database had 305 EME officers as of April 1997. The percentage of all EME officers who have a university degree is 84%. The percentage is highest at the colonel rank (7 of 7 officers) and lowest at the captain rank (78% of 169 officers). Approximately 5% of the officers in this MOC have been commissioned from the ranks (1 lieutenant-colonel, 2 majors, and 12 captains). The percentage of EME officers with university degrees goes up for the lower "age bins", see Table X below. This MOC is unlikely to have significant difficulties with the university degree policy for officers.

TABLE X
OFFICER/DEGREE UNIVERSALITY BY AGE - MOC 43 (EME)

Age Interval	Population Size	Percentage with a University Degree
All	305	84%
Under 50	290	84%
Under 45	259	87%
Under 40	216	88%

MOC 44 - Maritime Engineer (MARE)

28. The database had 576 MARE officers as of April 1997. The percentage of all MARE officers who have a university degree is 85%. The percentage is highest at the naval captain and commander ranks (13 of 14 officers and 40 of 43 officers, respectively) and lowest at the naval lieutenant rank (82% of 284 officers). The percentage of CFR officers in this MOC is approximately 5% (one naval captain, 10 lieutenant-commanders, and 18 naval lieutenants). The percentage of MARE officers with university degrees goes up slightly for the "younger" officers, see Table XI below. This MOC is unlikely to have significant difficulties with the university degree policy for officers.

TABLE XI
OFFICER/DEGREE UNIVERSALITY BY AGE - MOC 44 (MARE)

Age Interval	Population Size	Percentage with a University Degree
All	576	85%
Under 50	558	85%
Under 45	486	87%
Under 40	392	88%

MOC 46 - Airfield Engineer (AFLD ENGR)

29. The database had 195 AFLD ENGR officers as of April 1997. The percentage of all AFLD ENGR officers who have a university degree is 77%. The percentage is highest at the colonel rank (3 of 3 officers) and lowest at the lieutenant rank (6 of 10 officers). Approximately 9% of the officers in this MOC have been commissioned from the ranks (one major, 15 captains, and two lieutenants). The percentage of AFLD ENGR officers with university degrees goes up for the lower "age bins", see Table XII below. Taking into account the exemption for CFR officers, this MOC is unlikely to have significant difficulties with the university degree policy for officers.

TABLE XII
OFFICER/DEGREE UNIVERSALITY BY AGE - MOC 46 (AFLD ENGR)

Age Interval	Population Size	Percentage with a University Degree
All	195	77%
Under 50	185	78%
Under 45	154	81%
Under 40	111	85%

MOC 48 - Health Care Administration (HCA)

30. The database had 106 HCA officers as of April 1997. The percentage of all HCA officers who have a university degree is 58%. The percentage is highest at the lieutenant-colonel rank (4 of 5 officers) and lowest at the captain rank (48% of 62 officers). Approximately 25% of the officers in this MOC have been commissioned from the ranks (one lieutenant-colonel, 5 majors, and 21 captains). The percentage of HCA officers with university degrees is slightly higher for younger officers, see Table XIII below.

TABLE XIII
OFFICER/DEGREE UNIVERSALITY BY AGE - MOC 48 (HCA)

Age Interval	Population Size	Percentage with a University Degree
All	106	58%
Under 50	99	58%
Under 45	81	63%
Under 40	56	63%

31. There are no HCA colonels or lieutenant-colonels without a university degree under 50 years of age. Also, 6 of 8 HCA majors (all ages) without a university degree have IPS contracts while 17 of 32 HCA captains (all ages) without a university degree have an IPS contract. Taking into account the relatively large CFR population in this MOC, it is unlikely to have significant difficulties with the university degree policy for officers.

MOC 49 - Physiotherapist (PHY TH)

32. The database had 11 PHY TH officers as of April 1997, 10 of whom have a university degree. None of the officers in this MOC were commissioned from the ranks. As a university degree is expected for all officers in this MOC, the degree universality policy would have no impact here.

MOC 51 - Dental (DENT)

33. The database had 109 DENT officers as of April 1997. Although the percentage of all DENT officers who have a university degree is 74%, the 28 officers who are listed as not having a university degree are all in the dental officer training "pipeline". All five officers in the colonel and lieutenant-colonel ranks, as well as 32 of 33 majors have university degrees. None of the officers in this MOC were commissioned from the ranks. As a university degree is expected for all officers in this MOC, the degree universality policy would have no impact here.

MOC 53 - Physical Education and Recreation (PE&R)

34. The database had 18 PE&R officers as of April 1997. All seven majors and 9 of 11 captains have a university degree. One of the captains in this MOC was commissioned from the ranks. This MOC is unlikely to have significant difficulties with the university degree policy for officers.

MOC 54 - Pharmacy (PHARM)

35. The database had 47 PHARM officers as of April 1997. All 14 lieutenant-colonels/majors have a university degree while 24 of 33 captains also have a university degree (i.e. the remainder are in the training "pipeline"). None of the officers in this MOC were commissioned from the ranks. This MOC is unlikely to be affected by the university degree policy for officers.

MOC 55 - Medical (MED)

36. The database had 193 MED officers as of April 1997. Although the percentage of all MED officers who have a university degree is 84%, the 30 officers who are listed in the database as not having a university degree are all in the medical officer training "pipeline". One of the officers in this MOC was commissioned from the ranks. As a university degree is expected for all officers in this MOC, the degree universality policy would have no impact here.

MOC 56 - Medical Associate Officer (MAO)

37. The database had 21 MAO officers as of April 1997. All five majors, 11 of 14 captains, and both lieutenants have a university degree. One of the majors in this MOC was commissioned from the ranks. This MOC is unlikely to have significant difficulties with the university degree policy for officers.

MOC 57 - Nurse (NUR)

38. The database had 245 NUR officers as of April 1997. The percentage of all NUR officers who have a university degree is 45%. Although the one NUR colonel, 2 of 3 NUR lieutenant-colonels, and 15 of 17 NUR majors have university degrees, only 40% of 203 NUR have a university degree. One captain in this MOC was commissioned from the ranks. The percentage of NUR officers with university degrees does not vary appreciably with age, see Table XIV below.

TABLE XIV
OFFICER/DEGREE UNIVERSALITY BY AGE - MOC 57 (NUR)

Age Interval	Population Size	Percentage with a University Degree
All	245	45%
Under 50	224	43%
Under 45	182	41%
Under 40	136	43%

39. There is one NUR major without a university degree under 50 years of age. Also, 13 of 121 NUR captains (all ages) without a university degree have an IPS contract. This MOC will have difficulties implementing the university degree policy.

MOC 58 - Social Work (SOCW)

40. The database had 27 SOCW officers as of April 1997. 26 of 27 officers have a university degree and none were commissioned from the ranks. This MOC is unlikely to have difficulties with the university degree policy for officers.

MOC 59 - Pastoral Associate (PA(RC))

41. The database had 16 PA(RC) officers as of April 1997. 15 of 16 officers have a university degree and none were commissioned from the ranks. This MOC is unlikely to have difficulties with the university degree policy for officers.

MOC 61 - Chaplain (Protestant) (CHAP(P))

42. The database had 66 CHAP(P) officers as of April 1997. 63 of 66 officers have a university degree and none were commissioned from the ranks. This MOC is unlikely to have difficulties with the university degree policy for officers.

MOC 62 - Chaplain (RC) (CHAP(RC))

43. The database had 35 CHAP(RC) officers as of April 1997. 32 of 35 CHAP(RC) officers have a university degree and none were commissioned from the ranks. This MOC is unlikely to have significant difficulties with the university degree policy for officers.

MOC 65 - Flight Engineer (FLE)

44. The database had 1 FLE officer as of April 1997. That officer has no university degree and was commissioned from the ranks. With such a small population, it is difficult to say whether or not this MOC will be affected by the university degree policy for officers.

MOC 66 - Public Affairs (PAFF)

45. The database had 66 PAFF officers as of April 1997. The percentage of all PAFF officers who have a university degree is 80%. The one colonel, 3 of 4 lieutenant-colonels, 18 of 24 majors, 30 of 36 captains, and the one lieutenant have a university degree. One major and one captain have been commissioned from the ranks. This MOC is unlikely to have significant difficulties with the university degree policy for officers.

MOC 67 - Legal (LEG)

46. The database had 71 Legal officers as of April 1997, 96% of whom have a university degree. Three officers who are listed as not having a university degree are all in the legal officer training "pipeline". None of the officers in this MOC were commissioned from the ranks. As a university degree is expected for all officers in this MOC, the degree policy would have no impact here.

MOC 68 - Personnel Administration (PADM)

47. The database had 223 PADM officers as of April 1997. The percentage of all PADM officers who have a university degree is 74%. The percentage is highest at the colonel (3 of 3 officers) and lieutenant-colonel ranks (9 of 11 officers) and lowest at the major rank (37 of 56 officers). Approximately 9% of the officers in this MOC have been commissioned from the ranks (3 lieutenant-colonels, 9 majors, and 7 captains). The percentage of PADM officers with university degrees goes up for "younger" officers, see Table XV below.

TABLE XV
OFFICER/DEGREE UNIVERSALITY BY AGE - MOC 68 (PADM)

Age Interval	Population Size	Percentage with a University Degree
All	223	74%
Under 50	205	76%
Under 45	179	78%
Under 40	131	82%

48. There are two PADM lieutenant-colonels without a university degree under 50 years of age, one of whom is under the age of 45. Also, 18 of 19 PADM majors (all ages) without a university degree have IPS contracts while 10 of 34 PADM captains (all ages) without a university degree have an IPS contract. Taking into account the exemption for the CFR population, this MOC is unlikely to have significant difficulties with the university degree policy for officers.

MOC 69 - Logistics (LOG)

49. The database had 1116 LOG officers as of April 1997. The percentage of all LOG officers who have a university degree is 84%. Ninety percent of colonels, lieutenant-colonels, and majors have a university degree compared to 80% of captains. Approximately 4% of the officers in this MOC have been commissioned from the ranks (1 lieutenant-colonel, 5 majors, and 43 captains). The percentage of logistics officers with university degrees goes up slightly for "younger" officers, see Table XVI below.

TABLE XVI
OFFICER/DEGREE UNIVERSALITY BY AGE - MOC 69 (LOG)

Age Interval	Population Size	Percentage with a University Degree
All	1116	84%
Under 50	1050	86%
Under 45	859	86%
Under 40	617	86%

50. There are no LOG colonels/lieutenant-colonels without a university degree under 50 years of age. Also, 21 of 32 LOG majors (all ages) without a university degree have IPS contracts while 47 of 124 LOG captains (all ages) without a university degree have an IPS contract. Taking into account the CFR population, this MOC is unlikely to have significant difficulties with the university degree policy for officers.

MOC 71 - Maritime Surface and Sub-Surface (MARS)

51. The database had 865 MARS officers as of April 1997. The percentage of all MARS officers who have a university degree is 53%. The percentage is highest at the naval captain rank (23 of 30 officers) and commander rank (66 of 92 officers) and lowest at the naval lieutenant rank (45% of 463 officers). Approximately 2% of the officers in this MOC have been commissioned from the ranks (1 commander, 1 lieutenant-commander, 12 naval lieutenants, and 1 naval second lieutenant). The percentage of MARS officers with university degrees goes down slightly for "younger" officers, see Table XVII below.

TABLE XVII

OFFICER/DEGREE UNIVERSALITY BY AGE - MOC 71 (MARS)

Age Interval	Population Size	Percentage with a University Degree
All	865	53%
Under 50	821	53%
Under 45	709	50%
Under 40	555	47%

52. There are three MARS naval captains under the age of 50 without a university degree, all of whom are also under 45 years of age. There are 19 MARS commanders under the age of 50 who do not have a university degree, ten of whom are under the age of 45, and 3 of whom are under the age of 40. Also, 37 of 112 MARS lieutenant-commanders (all ages) without a university degree have IPS contracts while 24 of 253 MARS naval lieutenants (all ages) without a university degree have an IPS contract. This MOC may have difficulties implementing a "universal" university degree policy, particularly if it is implemented quickly.

MOC 72 - Personnel Selection (PSEL)

53. The database had 75 PSEL officers as of April 1997. The percentage of all PSEL officers who have a university degree is 97% (73 of 75 officers). No officers in this MOC have been commissioned from the ranks. This MOC is unlikely to be affected by the university degree policy for officers.

MOC 74 - Training Development (TRG DEV)

54. The database had 121 TRG DEV officers as of April 1997. The percentage of all TRG DEV officers who have a university degree is 95% (115 of 121 officers). No officers in this MOC have been commissioned from the ranks. This MOC is unlikely to be affected by the university degree policy for officers.

MOC 75 - Musician (MUSC)

55. The database had 9 MUSC officers as of April 1997, seven of whom do not have a university degree, including all five majors. All five majors and two of four captains have been commissioned from the ranks and would therefore be exempt from the university degree policy. With such a small population, it is difficult to say whether or not this MOC will be severely affected by the university degree policy for officers.

MOC 76 - Postal (POST)

56. The database had 9 POST officers as of April 1997, five of whom do not have a university degree, including five of seven majors. Three captains have been commissioned from the ranks in this MOC. With such a small population, it is difficult to say whether or not the POST MOC will be severely affected by the university degree policy for officers.

MOC 81 - Security (SECUR)

57. The database had 126 SECUR officers as of April 1997. The percentage of all SECUR officers who have a university degree is 73%. In this MOC, two of two colonels, 7 of 9 lieutenant-colonels, 71% of majors and 74% of captains have a university degree. Approximately 7% of the officers in this MOC have been commissioned from the ranks (1 lieutenant-colonel, 2 majors, 5 captains, and 1 lieutenant). The percentage of SECUR officers with university degrees does not vary significantly with age, see Table XVIII below.

TABLE XVIII
OFFICER/DEGREE UNIVERSALITY BY AGE - MOC 81 (SECUR)

Age Interval	Population Size	Percentage with a University Degree
All	126	73%
Under 50	118	73%
Under 45	104	76%
Under 40	84	74%

58. There are no SECUR colonels (and only 2 lieutenant-colonels) without a university degree under the age of 50. Also, 4 of 11 SECUR majors (all ages) without a university degree have IPS contracts while 5 of 18 SECUR captains (all ages) without a university degree have an IPS contract. Taking into account the CFR population, this MOC may not have significant difficulties with the university degree policy for officers.

MOC 82 - Intelligence (INT)

59. The database had 138 INT officers as of April 1997. The percentage of all INT officers who have a university degree is 69%. One of two INT colonels and 10 of 14 INT lieutenant-colonels have university degrees while 72% of majors and 67% of captains have university degrees. Approximately 4% of the officers in this MOC have been commissioned from the ranks (5 captains). The percentage of INT officers with university degrees is shown for various "age bins" in Table XIX below.

TABLE XIX
OFFICER/DEGREE UNIVERSALITY BY AGE - MOC 82 (INT)

Age Interval	Population Size	Percentage with a University Degree
All	138	69%
Under 50	126	73%
Under 45	102	75%
Under 40	68	66%

60. There are no INT colonels (and only one lieutenant-colonel) without a university degree under the age of 50. Also, 8 of 12 INT majors (all ages) without a university degree have IPS contracts while 7 of 26 INT captains (all ages) without a university degree have an IPS contract. This MOC may have some problems with the university degree policy, particularly if it is implemented quickly.

IV. QUESTIONS AND OBSERVATIONS

61. A policy which has all CF officers holding a university degree can be anticipated to affect operational MOCs more severely than professional/technical MOCs. Indeed, the extent of the "problem" has been demonstrated above by examining a database representing today's officer population. It has been shown here that some MOCs, such as the environmental engineering occupations, are in a much better position than others with respect to the university degree policy. However, many related policy decisions remain to be made, and, in this portion of the paper, a number of relevant questions are brought forward (for future discussion).

62. Will the university degree policy be applied immediately? It is clear from the current CF officer database, that this is practically impossible. Then, what would be an appropriate transition period? Should a transition to an all university degree officer corps be a "short" one (i.e over five or ten years), then structural difficulties can be anticipated. How would the CF deal with the cadre of officers who do not currently hold university degrees, (particulary "young" officers who may have considerable time left in their engagement contracts)?

63. As an example, consider the case of pilots. The percentage of all pilots who have a university degree is only 44%. Clearly, a policy which would require all pilots to have a degree would present a major transitional problem. The percentage is highest at the colonel rank (77%) and lowest at the captain rank (40%). Taking a 5 year time horizon, i.e. for those pilots in the system below the age of 50, the percentage with a degree is still only 45%. For a 10 year time horizon, i.e. for those pilots under age 45, the percentage with a university degree is only 42%. This drops to 41% for all pilots below the age of 40. Much effort would have to be expended in obtaining suitable candidates for university degree programs, perhaps at the expense of pilot training and unit operations.

64. What is the "cost" of a university degree policy - with respect to operational effectiveness, attrition, recruitment, training, etc? Should "young" officers delay physically demanding, MOC-specific training for academic qualifications? Would this not lower effectiveness in "sharp end" units? What

are the implications on ("operational") MOCs for future promotions, postings, experience levels, etc.? University graduates earn more than people without such qualifications. They also tend to have better job prospects. Is the government willing to pay higher compensation to its military officer corps in concert with a policy which would serve to discourage entrants without university degrees (who tend to have lower economic expectations)?

65. The data show that the percentage of officers having a university degree goes up as rank increases. Is this a natural circumstance associated with age, access to longer term posting stability, a correlation with successful career development, etc? Should the policy be applied equally to all rank levels? The lowest proportion of officers with a university degree is usually at the captain rank - perhaps due (in part) to the CFR program, as few NCMs have degrees upon commissioning. Should the policy apply to higher ranks only? There may be value in allowing officers to be commissioned without a university degree, with limited prospects of promotion above the rank of captain unless they obtain a university degree (perhaps with appropriate time away from DND to attend university in mid-career).

66. These issues (and likely many others) deserve further investigation and analysis. In short, how fundamental a change is the universal CF officer university degree policy?

V. SUMMARY

67. This paper has analyzed a number of characteristics of the current officer database in order to examine the nature and extent of any problems which might arise in a transition to an "all university degree" officer corps. It has been shown here that some MOCs, particularly the professional/technical MOCs, are in a much better position than others to implement such a policy. In particular, some operational MOCs such as INF, PLT, and MARS may have the greatest problems.

68. Table XX presents the list of officer MOCs which have been identified in this paper as potentially having problems if the university degree policy for all officers is adopted. The list is sorted by the percentage of officers (currently within the MOC) holding a university degree. To represent a "ten year" look forward, the third column shows the percentage of officers under the age of 45 who hold a university degree. The fourth column gives the percentage of CFR officers in the MOC who would be exempt from the university degree requirement. (No MOCs with populations below 100 are listed.)

TABLE XX
MOCs WHICH MAY FACE PROBLEMS WITH
THE OFFICER/DEGREE UNIVERSALITY POLICY
(Population > 100 Officers)

MOC	% of all Officers with a Degree	% of all Officers with a Degree (age < 45)	% CFR
39 - AEC	38	36	5
32 - PILOT	44	42	0
57 - NUR	45	41	0
23 - INFANTRY	50	51	2
71 - MARS	53	50	2
22 - ARTILLERY	55	55	1
21 - ARMOUR	56	51	2
31 - ANAV	57	56	0
82 - INT	69	75	4

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The "Report to the Prime Minister on the Leadership and Management of the Canadian Forces" tabled by the Minister of National Defence 25 March 1997 contained many planned changes to personnel policies. One of these was making a university degree a prerequisite to commissioning as an officer (with the only exceptions to be made for those commissioned from the ranks). This research note analyses the current military officer database to determine what percentage of officers have university degrees in each military occupation (MOC). Other factors such as rank, age, and entry plan are included in the analysis in order to examine some of the implications of having a "universal" requirement for an undergraduate degree. Since a significant proportion of serving officers in certain MOCs do not now have university degrees, it is shown here that these MOCs are not in a position to easily adapt to such a requirement. Furthermore, in most cases, the age profiles of officers without degrees will prevent the quick attainment of an "all university degree" officer corps.

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